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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/676,262	10/02/2003	Hak-su Oh	1793.1018	3475
21171	7590	02/10/2006	EXAMINER	
STAAS & HALSEY LLP SUITE 700 1201 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005			ELMORE, STEPHEN C	
			ART UNIT	PAPER NUMBER
			2185	

DATE MAILED: 02/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/676,262

Applicant(s)

OH, HAK-SU

Examiner

Stephen Elmore

Art Unit

2185

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 2 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,6 and 10-28 is/are rejected.
- 7) ☒ Claim(s) 3-5 and 7-9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

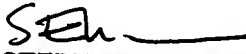
Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 2 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.


STEPHEN C. ELMORE
PRIMARY EXAMINER

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

1. This Office action responds to the application filed October 2, 2003.
2. Claims 1-28 are presented for examination.

Drawings

3. The drawings are objected to because:
 - a. Figure 5B contains a drawing entity meant to identify a column write address (oval with "CL" inside), but the entity label is misspelled as "CL" instead of the "COL" used consistently in the remainder of the drawings;
 - b. Figure 5B depicts the activity of writing data but the left pointing arrow encompassing the two bytes of data being written should not be shown as being written to the left; the write data arrow should point to the right to be consistent with the address bus arrow which points to the right, because the memory module being written to is to the right of this figure.

Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR § 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

4. The disclosure is objected to because of the following informalities:

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a. The abstract of the disclosure is objected to because it uses the terminology "upper module" (two places), but it is unknown what is an "upper module" or what spatial, or structural relationship the "upper" is in reference to;

b. The specification is also objected-to because paragraph [0017] makes reference to "an upper module of a system," and a "lower module," however, the disclosure does not say what "upper" and "lower" are in relation to (in the system), or define these terms; but these are not terms in the art, and without further explanation this terminology is meaningless because the disclosure does not say exactly what kind of entities an "upper module" or a "lower module" is, making the disclosure indefinite;

c. The specification is further objected-to because paragraphs [0020, 0024-0026, 0029-0033, 0035-0036, 0038, 0045, 0048, 0049, 0051, 0054, 0058, 0060, and 0067] extensively use the terminology "upper module" which has the same problem as already mentioned above, making the disclosure indefinite.

Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 27 and 28 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for,

Claim 27,

(a.) the limitation (lines 4-5)

"a first transmission line, which transmits only column address, row address, and write data from the memory controller to the memory module (emphasis added)"

does not however reasonably provide enablement for,

(b.) the limitation (lines 4-5)

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"a first transmission line, which transmits only column address, row address, and/or write data from the memory controller to the memory module (emphasis added)"

or

Claim 28,

(a.) the limitation (line 6)

"an address line, which transmits only column address, row address, and write data from the memory controller to the memory module (emphasis added)"

does not however reasonably provide enablement for,

(b.) the limitation (line 6)

"an address line, which transmits only column address, row address, and/or write data from the memory controller to the memory module (emphasis added)"

This is because in both (b.)'s above, the use of the "or" in combination with the "only" signifies that the first transmission (or address) line only transmits one of: either a column address, or a row address, or write data, exclusively, since these are expressed as only in the alternative, but the disclosure's teaching of the first transmission (or address) line does not behave this way, the disclosure teaches that the transmission (or address) line transmits no less than all of these elements, none are excluded from transmission which is what the "only" suggests.

The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and or use the invention commensurate in scope with these claims.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 2, 6, 10, 11, 12-26 and 28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims are indefinite because:

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- a. Claims 2, 6, 10-12, 15-17, 19, 20, 23, 25, and 28, use the term "upper module". This is not a term in the art, nor has it been defined in the claim or specification what is considered "upper" in a system, and so, the scope of meaning has not been explained or disclosed such that one of ordinary skill in the art would understand what, or which, element this term is referring to;
- b. Claims 13, 14, 21, 22, 24 and 26 inherit the deficiency of the preceding claim;
- c. Claims 11 and 23, "the upper module" lacks proper antecedent basis;
- d. Claim 18, line 13, the use of "respectively" is indefinite because it is uncertain what element in this limitation is being transmitted to what element, the claim can be interpreted to mean that both the address and write data are transferred to both the memory buffer and the write data buffer, or some other interpretation may be what is meant, this language is not clear, the scope of "respectively" needs to be clarified.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

10. Claim 1 is rejected under 35 U.S.C. 102(a) as being anticipated by Watanabe et al., US 6,438,634 ("Watanabe").

Watanabe teaches the claimed memory controlling apparatus comprising:

- a. memory module, taught as element 260, address line, taught as element 300, data line, element 300 (note: this claim limitation does not require the address line and data line to be separate, so 300 teaches both), a first transmitter limitation is taught as inherent to the transmission of an address of read data, or an address of write data along with the write data to the memory module via the address line, see Abstract, last line, see col. 2, lines 55-63, see Figure 4, and second transmitter limitation is taught as inherent to the transmission of data read from the memory module via the data line since transmission occurs and the line 300 is used for both addressing and data transfer.

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Allowable Subject Matter

11. Claims 3-5 and 7-9 are objected to as being dependent upon a rejected base claim, but would be allowable *over the current prior art of record*, if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Wakerly, US 5,237,670 and 5,313,594 teaches that it is very old in the art to use part of an address transmission bus for write data transfers to improve write data transfer efficiency to local memories.

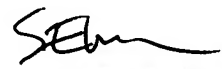
Rubinfeld et al., US 4,851,991 and Rubinfeld, US 5,091,845 teaches that it is old in the art for processors to use an address transmission line to transfer write data to memory in addition to transmitting addresses to improve data transfer efficiency to memories.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen Elmore whose telephone number is (571) 272-4436. The examiner can normally be reached on Mon-Fri from 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Kim can be reached on (571) 272-4182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

February 5, 2006


STEPHEN C. ELMORE
PRIMARY EXAMINER